

AMENDMENT TO THE CLAIMS

This listing of claims will replace all prior versions, and listing, of claims in the application:

Listing of Claims:

1. (Original) A method of making a mold from shape memory materials for manufacturing castable composite parts with resins which are solidified within said mold by application of a curing temperature, said method comprising the steps:
 - a) providing said shape memory material with a glass transition temperature which exceeds said curing temperature;
 - b) processing said shape memory material into a memorized shape; and
 - c) deforming said shape memory material from said memorized shape into a desired mold shape.
2. (Original) The method of claim 1 wherein said shape memory material is a shape memory alloy.
3. (Original) The method of claim 1 wherein said shape memory material is a shape memory polymer.
4. (Original) The method of claim 1 wherein said processing of said shape memory material is by die casting.
5. (Original) The method of claim 1 wherein said processing of said shape memory material is by solvent casting.
6. (Original) The method of claim 1 wherein said processing of said shape memory material is by extrusion.

7. (Original) The method of claim 1 wherein said processing of said shape memory material is by molding and annealing.
8. (Original) The method of claim 1 wherein said deforming of said shape memory material is by draping.
9. (Original) The method of claim 1 wherein said deforming of said shape memory material is by vacuum forming.
10. (Original) The method of claim 1 wherein said deforming of said shape memory material is by computer aided mechanical technology.
11. (Original) The method of claim 1 wherein said deforming of said shape memory material is by stamping.
12. (Original) The method of claim 11 wherein said stamping of said shape memory material is performed with said shape memory material below said glass transition temperature.
13. (Original) The method of claim 11 wherein said stamping of said shape memory material is performed with said shape memory material above said glass transition temperature.
14. (Original) The method of claim 1 wherein said shape memory material comprises an embedded thermal energy generation means.
15. (Original) The method of claim 14 wherein said thermal energy generation means comprises an electrical conductor.

16. (Original) The method of claim 14 wherein said thermal energy generation means comprises thermally conductive fibers.

Claims 17-22 (Canceled)

23. (Currently amended) A method of making a mold for casting a castable composite part with resins which are solidified within said mold by application of a curing temperature, said method comprising:

a) providing a film comprising a SMP with a glass transition temperature which exceeds said curing temperature and having an upper and lower surface;

b) processing said film into a memorized shape;

[[b]]c) providing a form having an upper and lower surface, the upper surface of the form having a molded area; and

[[c]]d) placing the lower surface of the film onto the upper surface of the form such that the film conforms to the molded area thereof.

24. (Currently amended) The method of making a mold in claim 23 wherein the film in step [[c]]d) is placed onto the upper surface of the form under vacuum and the form and film are exposed to the atmosphere such that the film conforms to the molded surface.

25. (Original) The method of making a mold in claim 23 wherein the SMP is polynorbornene based.

26. (Original) The method of making a mold in claim 23 further comprising step d) providing a heat source, the heat source being in thermal communication with the film.

Claims 27-39 (Canceled)

40. (Original) A method of making a mold for a castable composite part with resins which are solidified within said mold by application of a curing temperature, the method of making the mold comprising:

- a) providing a castable composite part;
- b) providing a film comprising SMP ~~said SMP being molded with a glass transition temperature which exceeds said curing temperature;~~
- c) processing said film into a memorized shape;
- d) molding said film around said castable composite part;
- [[c]]e) removing said [[SMP]] film from said castable composite part to form a mold thereof.

41. (Original) The method of making a mold in claim 40 further comprising after step [[b]]d) and prior to step [[c]]e) quenching said SMP in said film to retain the shape of said castable composite part.

42. (Original) The method of making a mold in claim 40 wherein the SMP is polynorbornene based.

43. (Original) The method of making a mold in claim 40 wherein the castable composite part is one of an automotive, mechanical, and electrical part.

Claims 44-50 (Canceled)

51. (New) A method of making a mold from shape memory materials for manufacturing castable composite parts with resins which are solidified within said mold by application of a curing temperature, said method comprising the steps:

- a) providing said shape memory material with a glass transition temperature which exceeds said curing temperature, wherein said shape memory material comprises an

embedded thermal energy generation means;

- b) processing said shape memory material into a memorized shape; and
- c) deforming said shape memory material from said memorized shape into a desired mold shape.

52. (New) The method of claim 51 wherein said thermal energy generation means comprises an electrical conductor.

53. (New) The method of claim 51 wherein said thermal energy generation means comprises thermally conductive fibers.

54. (New) The method of claim 1 wherein the shaped memory material is processed into a memorized shape that is in the form of a flat sheet.

55. (New) The method of claim 1 wherein the shaped memory material is processed into a memorized shape that is an inverted image of the desired mold shape.

56. (New) The method of claim 1 wherein the shaped memory material is transparent.

57. (New) A method of making a mold for use in manufacturing castable composite parts, said parts being cast with resins that solidify within said mold upon application of a curing temperature, said method comprising the steps:

- a) providing a mold material of shape memory polymer having a glass transition temperature which exceeds the curing temperature of the castable composite part to be formed in the mold;
- b) processing said shape memory material into a memorized shape; and
- c) deforming said shape memory material from said memorized shape into a desired mold shape, wherein said desired mold shape is different from said

memorized shape such that the mold expels the cast composite part therefrom when the shape memory polymer is caused to revert to its memorized shape.

58. (Original) The method of claim 57 further comprising embedding a thermal energy generation means in the shape memory polymer.

59. (Original) The method of claim 58 wherein said thermal energy generation means comprises thermally conductive fibers.

60. (New) The method of claim 58 wherein the shaped memory material is processed into a memorized shape that is in the form of a flat sheet.

61. (New) The method of claim 58 wherein the shaped memory material is processed into a memorized shape that is an inverted image of the desired mold shape.

62. (New) The method of claim 58 wherein the shaped memory material is transparent.